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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,388	08/28/2001	Donald A. Shiffler II	PRS077	5684
23425	7590	03/11/2003		
KENNTH E CALLAHAN 377 ABW/JAN 2251 MAXWELL SE KIRTLAND AFB, NM 87117			EXAMINER ROY, SIKHA	
			ART UNIT 2879	PAPER NUMBER

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/682,388	SHIFFLER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sikha Roy	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 16 December 2002.

2a) This action is FINAL.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) \_\_\_\_\_ is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-5 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. .	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

The Amendment, filed on December 6, 2002 has been entered and is acknowledged by the Examiner.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4,5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4,5 recites the limitation "anode/cathode" in claim 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,137,477 to Krol et al.

Regarding claim 1 Krol et al. disclose (column 1 lines 10-25, column 3 lines 35-40) anode/collector (grid electrodes) for an electron tube comprised of carbonized synthetic resin.

Referring to claim 2 Krol et al. disclose (column 5 lines 15-22) anode/collector (grid electrode) comprising of carbonized resin and a thin layer of pyrolytic graphite. The Examiner notes that the claim limitation that "pyrolytic carbon deposited by chemical vapor deposition" is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113). Therefore, it is the position of the examiner that it would have been obvious to one of ordinary skill in the art that the electrode disclosed by Krol et al. is at least a fully functional equivalent to the Applicant's claimed anode/collector.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,137,477 to Krol et al. in view of U.S. Patent 4,442,165 to Gebhardt et al.

Regarding claim 3 Krol et al. disclose (column 1 lines 5-22, column 6 lines 20-45) method of coating anode/collector (grid electrode) used in electron tube comprising of coating the surface of the carbon electrode by phenol resin (in powder or granulate form), then carbonization of the resin, carried out by baking in a furnace at a temperature upto 800 °C and deposition of pyrolytic graphite for increasing thermal and electrical conductivities of the electrode. Krol et al. further disclose (column 5 lines 56-58) baking the electrode in a vacuum upto 1600 °C to remove any remaining impurities.

Krol et al. do not disclose the deposition of pyrocarbon material by pyrolysis through chemical vapor deposition.

Gebhardt et al. in relevant art of fabricating low density thermally insulating carbon foam composite disclose (column 2 lines 1-20, Fig.1) forming a layer 14 of pyrolytic carbon covering the carbon layer 12 by pyrolysis through vapor deposition of hydrocarbon at a specified temperature and pressure. It is to be noted that deposition of pyrocarbon by chemical vapor deposition as shown by Gebhardt et al. is a process well known in the art for providing a body of pyrolyzed carbon to increase the strength of the material.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to deposit the pyrocarbon on the carbonized resin of the electrode of Krol et al. by chemical vapor deposition process, a process well known in the art as disclosed by Gebhardt et al. for increasing the strength of the material of the electrode.

Regarding claim 4 Krol et al. disclose the carbonization of the resin is carried out in an inert atmosphere at a temperature upto approximately 800 °C.

Regarding claim 5 Krol et al. disclose (column 4 line10-15) carbonizable resins are phenol resins (strands of phenol resins, phenol resin plates and foils).

***Response to Arguments***

Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.  
Sikha Roy  
Patent Examiner  
Art Unit 2879

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